

**WHAT IS CLAIMED IS:**

1 1. A virtual channel table for a broadcast protocol, comprising identification information  
2 in a bit stream syntax thereof, said identification information identifying each channel as one  
3 of an active and an inactive channel.

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1 2. The virtual channel table of claim 1, wherein said virtual channel table is included in a  
2 program and system information protocol for a digital broadcast.

1 3. The virtual channel table of claim 2, wherein said digital broadcast is any one of a  
2 digital terrestrial broadcast and a digital cable broadcast.

1 4. The virtual channel table of claim 1, wherein said identification information sets a  
2 value of a program number field in the virtual channel table to "0" to indicate that a  
3 corresponding channel is an inactive channel.

1 5. The virtual channel table of claim 1, wherein said identification information sets a  
2 value of a number of elements field of a service location descriptor in the virtual channel  
3 table to "0" to indicate that a corresponding channel is an inactive channel.

1 6. The virtual channel table of claim 1, wherein said identification information indicates  
2 that a corresponding channel is an inactive channel whenever a service location descriptor is  
3 not included in the virtual channel table.

1 7. The virtual channel table of claim 1, wherein said identification information assigns at  
2 least one bit of a reserved field to indicate that a corresponding channel is an inactive  
3 channel.

1 8. The virtual channel table of claim 7, wherein said reserved field is positioned in a  
2 statement of a for\_loop in a bit stream syntax of the virtual channel table.

1 9. The method of broadcasting using a virtual channel table in a broadcasting protocol,  
2 said method comprising:

3 including identification information in the virtual channel table, said identification  
4 information identifying a channel as being one of an active and an inactive channel, and  
5 transmitting the virtual channel table; and

6 determining at a receiver whether the channel is inactive based upon the identification  
7 information defined in the virtual channel table, by parsing the virtual channel table.

1 10. The method of claim 9, wherein including identification information further  
2 comprises, when a channel is inactive, setting a value of a program number field in the virtual  
3 channel table to "0" and inhibiting a service location descriptor from being transmitted  
4 through the virtual channel table.

1 11. The method of claim 9, wherein including identification information further

- 2 comprises setting a value of the program number field and a value of a reserved field assigned  
3 for recognizing an inactive channel in the parsed virtual channel table to "0."

1 12. The method of claim 9, wherein determining at the receiver whether the channel is  
2 inactive comprises determining that the channel is inactive when a corresponding service  
3 location descriptor is not received in the virtual channel table.

1 13. The method of claim 9, wherein determining at the receiver whether the channel is  
2 inactive comprises determining that the channel is inactive when a value of a reserved field  
3 assigned for recognizing an inactive channel in the parsed virtual channel table is "0."

1 14. The method of claim 9, wherein determining at the receiver whether the channel is  
2 inactive comprises determining that the channel is inactive when a value of a program  
3 number field in the virtual channel table is "0."

1 15. In a digital television receiver, a method of inhibiting display of an inactive channel,  
2 comprising:  
3 receiving a digital broadcast signal comprising a virtual channel table;  
4 parsing the virtual channel table;  
5 retrieving identification information from the parsed virtual channel table indicating  
6 whether a channel is inactive; and  
7 and, in response to said identification information indicating that the channel is

8 inactive, inhibiting display of said channel when said channel is selected by a user.

1 16. The method of claim 15, wherein retrieving the identification information comprises  
2 reading a value of a reserved field for identifying an inactive channel in the parsed virtual  
3 channel table.

1 17. The method of claim 15, wherein retrieving the identification information comprises  
2 reading a value of a program number field in the parsed virtual channel table.

3 18. The method of claim 15, wherein retrieving the identification information comprises  
4 determining whether a service location descriptor is found in the parsed virtual channel table.

1 19. In a digital broadcast transmitter, a method of indicating an inactive channel,  
2 comprising:

3 generating a virtual channel table, including within the virtual channel table

4 information indicating the inactive channel; and

5 transmitting the virtual channel table as part of a digital broadcast signal.

1 20. The method of claim 19, wherein including within the virtual channel table  
2 information indicating the inactive channel comprises setting a value of a program number  
3 field in the virtual channel table to indicate the inactive channel.

1 21. The method of claim 19, wherein including within the virtual channel table  
2 information indicating the inactive channel comprises assigning at least one bit of a reserved  
3 field to indicate the inactive channel.

1 22. The method of claim 19, wherein including within the virtual channel table  
2 information indicating the inactive channel comprises omitting a service location descriptor.

1 23. A digital television receiver, comprising:  
2 receiving means for receiving a digital broadcast signal including a virtual channel  
3 table, the virtual channel table including identification information identifying a channel as  
4 being one of an active and an inactive channel;  
5 detecting means for detecting the identification information in the virtual channel  
6 table; and  
7 inhibiting means for inhibiting display of the channel when the channel is selected by  
8 the user and the channel is the inactive channel.

1 24. The digital television receiver of claim 23, wherein the virtual channel table is  
2 included in a program and system information protocol for the digital broadcast signal.

1 25. The digital television receiver of claim 23, wherein the identification information has  
2 a value of "0" in a program number field of the virtual channel table when the channel is the  
3 inactive channel.

1 26. The digital television receiver of claim 23, wherein the identification information has  
2 a value of "0" in a number of elements field of a service location descriptor in the virtual  
3 channel table when the channel is the inactive channel.

1 27. A digital television (DTV) receiver, comprising:

2 receiving means for receiving a digital broadcast signal including a virtual channel  
3 table, the virtual channel table including identification information identifying a channel as  
4 being one of an active and an inactive channel;

5 a program and system information protocol (PSIP) decoder for detecting the  
6 identification information in the virtual channel table and providing an output indicating  
7 whether the channel is the inactive channel; and

8 a user interface module for receiving the output of the PSIP decoder and inhibiting  
9 display of the channel when the channel is selected by the user and the channel is the inactive  
10 channel.

1 28. The DTV receiver of claim 27, wherein the receiving means comprises:

2 demodulation means for demodulating the digital broadcast signal and outputting a  
3 baseband signal; and

4 decoder means for decoding the baseband signal and providing a PSIP data stream to  
5 the PSIP decoder.

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